

# US005102417A

# United States Patent [19]

Palmaz

[11] Patent Number:

5,102,417

[45] Date of Patent:

Apr. 7, 1992

[54]	EXPANDABLE INTRALUMINAL GRAFT,
• •	AND METHOD AND APPARATUS FOR
	IMPLANTING AN EXPANDABLE
	INTRALUMINAL GRAFT

[75] Inventor: Julio C. Palmaz, San Antonio, Tex.

[73] Assignee: Expandable Grafts Partnership, San

Antonio, Tex.

[21] Appl. No.: 174,246

[22] Filed: Mar. 28, 1988

# Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 923,798, Nov. 3, 1986, Pat. No. 4,739,762, which is a continuation-in-part of Ser. No. 796,009, Nov. 7, 1985, Pat. No. 4,733,665.

[51]	Int. Cl.5	. A61M 5/00; A61F 2/02
[52]	U.S. Cl	<b>606/195;</b> 604/8;
		604/96; 604/282; 623/11
[58]	Field of Search	128/343, 344; 604/93,
• •		97, 8, 283; 623/1, 12, 11;

606/191-195, 108

[56] References Cited

# **U.S. PATENT DOCUMENTS**

3,599,641	8/1971	Sheridan	604/283
3,968,800	7/1976	Vilasi	128/343.
4,076,285	2/1978	Martinez	604/242
4,503,569	3/1985	Dotter	128/343
4,553,545	11/1985	Maass et al	128/341
4,676,241	6/1987	Webb et al.	604/283
4,731,054	3/1988	Billeter et al	. 604/93
4,733,665	3/1980	Palmaz	128/343
4,739,762	4/1988	Palmaz	128/343

#### FOREIGN PATENT DOCUMENTS

1205743	9/1970	United Kingdom		128/343
2135585	9/1984	United Kingdom	*************	128/343

# OTHER PUBLICATIONS

"Self-Expanding Endovascular Graft: An Experimental Study in Dogs"; Yoshioka et al., AJR 151: 673-679, Oct. 1988.

"Expandable Intralumiral Graft: A Preliminary Study" Radiology, Jul. 1985 Paper Presented at 70th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Nov. 25, 1984, by Jolio C. Palmaz et al.

"Transluminally-Placed Coilspring Endarterial Tube Grafts"; Dotter Investigative Radiology; Sep.-Oct. 1969.

"Non Surgical Placement of Arterial Endoprostheses: A New Technique Using Nitirol wire"; Cragg et al., Radiology 147, 1983.

Tetsuya Yoshioka et al., "Self-Expanding Endovascular Graft: An Experimental Study in Dogs", ASR 151: 673-676, Oct. 1988.

Primary Examiner—C. Fred Rosenbaum Assistant Examiner—Mark Bockelman Attorney, Agent, or Firm—Ben D. Tobor

### 7] ABSTRACT

A plurality of expandable and deformable intraluminal vascular grafts are expanded within a blood vessel by an angioplasty balloon associated with a catheter to dilate and expand the lumen of a blood vessel. The grafts may be thin-walled tubular members having a plurality of slots disposed substantially parallel to the longitudinal axis of the tubular members, and adjacent grafts are flexibly connected by at least one connector member.

# 36 Claims, 3 Drawing Sheets

